European Mycoplasma Conference London 2019

ESGMAC - ESCMID study group for Mycoplasma and Chlamydia Infections

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Organising Committee

Authored by: Vicki Chalker & Brad Spiller

Welcome to London!

We are thrilled you have travelled to join us to discuss mycoplasmas.

If you have any questions or need help please ask members of the conference team (identified by stressed out appearance). We hope this conference is valuable and you make many contacts for future fruitful research and work.

We would like to thank our hosting organisations and sponsors for supporting the meeting and our invited speakers who have travelled from across the world to be with us.

We would like to thank the scientific committee for assisting in programme design and abstract review, Gloria and Yvette for assisting with administration and all the delegates for attending.

Wishing you a successful symposium

Vicki Chalker, Brad Spiller & the Organising Committee

London 2019

"Imagination is more important than knowledge" Albert Einstein

"Sharing knowledge seeds imagination" Vicki Chalker

Abstract 42

Use of fluorescence expression tools for the comparative analysis of the interactions of *Mycoplasma mycoides* and *Mycoplasma bovis* with bovine cells

Lucía Manso-Silván, Tiffany Bonnefois, Olivia Cadamuro, François Thiaucourt, Valérie Rodrigues, Philippe Totté

CIRAD, UMR ASTRE, F-34398 Montpellier, France.
INRA, UMR1309 ASTRE, F-34398 Montpellier, France.

Background: Fluorescence expression systems adapted to the analysis of host-mycoplasma interactions were recently developed. The aim of this work was to apply them to study the colonisation and persistence capabilities of the bovine pathogens *Mycoplasma mycoides* subsp. *mycoides* (*Mmm*) and *Mycoplasma bovis* in bovine cells.

Methods. Mini-transposons affording high-level expression of GFP2, mCherry, mKO2 and mNeonGreen were used to mark *Mmm* and *M. bovis* strains. The resulting fluorescent mutants were characterised by epifluorescence microscopy and fluorimetry and the sites of transposon insertion were identified by sequencing. Interactions of mNeonGreen mutants with bovine cells were analysed using flow cytometry and confocal microscopy.

Results: The production, selection and characterisation of fluorescent clones were straightforward and compatible with the production of fluorescent mutant banks. *M. bovis* presented much higher adhesion, invasion and proliferation capacities than *Mmm* in culture with non-phagocytic cells and showed increased resistance to elimination by macrophages.

Conclusion: The remarkable differences in the invasion and persistence capabilities of *Mmm* and *M. bovis* observed here are in agreement with the pathogenesis of the infections caused by these mycoplasmas. mNeonGreen fluorescent mutants have proven extremely useful for analysis of mycoplasma-host cell interactions. Furthermore, the fluorescence expression tools used in this study offer innumerable perspectives for the functional analysis of a wide range of mycoplasma species both *in vitro* and *in vivo*.